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[54] **LABELING AND TRACING SYSTEM FOR JUMPER USED IN AN EXCHANGE**

[75] Inventors: **Leonard George Cohen**, Atlanta; **George Frank DeVeau**, Cumming, both of Ga.

[73] Assignee: **Lucent Technologies Inc.**, Murray Hill, N.J.

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[51] **Int. Cl.**[6] **G06F 17/00**; G09F 3/00

[52] **U.S. Cl.** **235/375**; 235/385; 79/326; 439/489; 439/491

[58] **Field of Search** 235/375, 385; 379/25, 178, 326; 439/955, 488, 489, 491

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Primary Examiner—Donald T. Hajec

Assistant Examiner—Drew A. Dunn

[57] **ABSTRACT**

The present invention includes a system for tracing jumpers used in an exchange to cross-connect optical fibers or wires served by the exchange. The system includes an exchange housing receptacles with optically-encoded data associated with each receptacle or a group of receptacles. The optically-encoded data for a receptacle(s) uniquely identifies the physical location of the receptacle from any other receptacle in the exchange. Likewise, the jumpers each have optically-encoded data formed thereon that uniquely identifies the jumper or jumper end and distinguishes the jumper from any other jumper used in the exchange. If no jumper is to be connected to a particular receptacle, a cover with optically-encoded data can be attached to a receptacle to indicate that no jumper is connected to the receptacle. The system of this invention also includes a handheld optical scanner that can be used by an operator to scan the optically-encoded data associated with a receptacle(s) and the optically-encoded data of a jumper(s) connected to the receptacle(s), and transmits the optically-encoded data signals to a computer of the system of this invention. The computer can generate a display of the physical location of a receptacle(s) in association with the identity of the jumper(s) and connected thereto, so that an operator can diagnose misconnections of the jumpers between receptacles in the exchange.

26 Claims, 6 Drawing Sheets